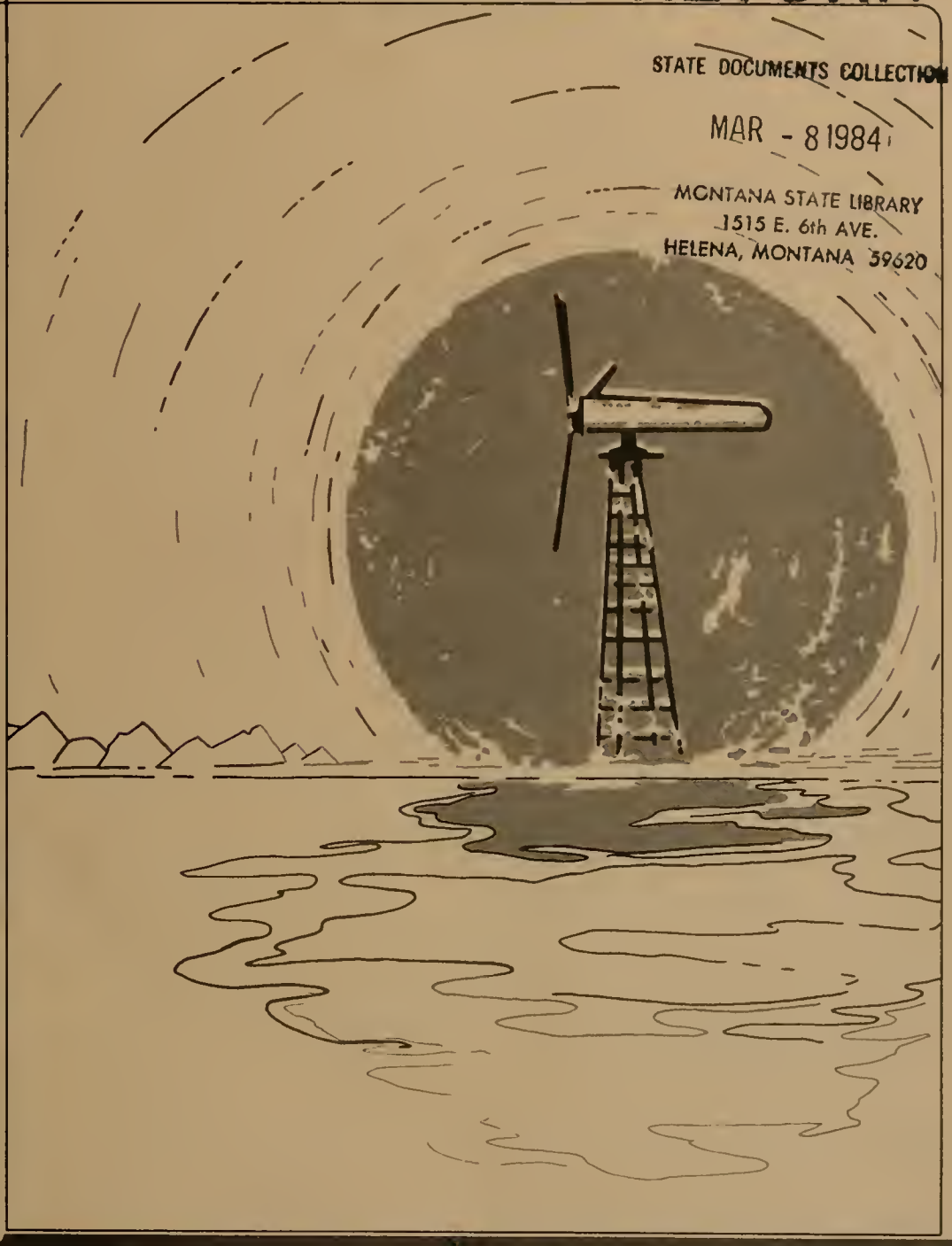
Renewable ENERGY Program



report to the montana legislature

january 1983

Renewable Energy Program

FY 1982-83 Biennium

HIGHLIGHTS

To improve the Renewable Energy Program, during the FY 1982-83 biennium DNRC:

-- established a renewable energy loan program to be administered through the state's private financial institutions;

-- implemented stricter project selection criteria and better defined contracting procedures;

-- awarded 16 grants totalling $407,708 (FY 1982);

-- approved 7 loans totalling $767,700 (FY 1982);

-- placed a greater emphasis on funding department-directed projects;

-- placed a greater emphasis on projects that would lead to increased energy savings and public benefits;

-- instituted a sustainable energy assessment program to determine Montana's renewable energy resource potential, the most promising end uses for the energy produced, and applicable state-of-the-art technologies;

-- consolidated DNRC's Renewable Energy Bureau and Conservation Bureau to achieve better coordination of program activities and less duplication of efforts;

-- increased public awareness of the Renewable Energy Program through several new publications;

-- produced renewable energy information features for use in newspaper and magazine articles, radio spots, and television public service announcements;

-- conducted renewable energy workshops throughout Montana;

-- established a Renewable Energy Program final report library to publicize and disseminate information gained through program-funded projects.

RENEWABLE ENERGY PROGRAM

Report

to the

48th Montana Legislature

January 1983

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Director, DNRC

Energy Division

Department of Natural Resources

and Conservation

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CONTENTS

PROGRAM DESCRIPTION

The Renewable Energy Program, funded through Montana's Coal Severance Tax, was established to reduce the state's reliance on fossil fuels through increased use of solar, wind, geothermal, small-scale hydro, and biomass energy alternatives. In 1976 the Department of Natural Resources and Conservation (DNRC) offered its first grants to Montanans for researching, developing, and demonstrating renewable energy alternatives. To date more than 200 projects, available for public inspection, have been financed in whole or in part through DNRC grants.

As the technology advanced and Montanans became more receptive to energy innovations, the renewable energy industry emerged. To encourage the private sector to develop sources of renewable energy, the legislature authorized establishment of a loan program to be administered through the state's financial institutions. The loan program, developed by DNRC, was designed to encompass commercial ventures and projects with payback or income-generating potential.

Most projects funded through the Renewable Energy Program fall within the progression from research and development to demonstration and, finally, commercialization. The grant program encompasses projects in the earlier stages--research, development, and demonstration--while the loan program is designed for projects that have reached the commercialization stage.

DNRC also solicits individuals and organizations to undertake specific projects. When a need for a particular study has been identified, DNRC outlines project needs and goals and then sends out a formal Request for Proposals (RFP) that invites qualified individuals and organizations to bid competitively on the project.

FUNDING ELIGIBILITY

An individual or organization is eligible to apply for a grant, provided the grant project is conducted in Montana and is applicable to Montana's energy needs. Grant projects may be conducted in the areas of renewable energy research, development, education, public information, and demonstration.

Any new or expanding business incorporated or authorized to do business in Montana is eligible to apply for a loan. The activities funded must be conducted in Montana and may include development, design, building, manufacturing, marketing, distribution, or sale of a renewable energy form, process, system or system component, or of renewable energy information. Renewable energy loans may not be used for refinancing.

Conservation is not considered a renewable energy source; thus, grant and loan projects dealing exclusively with energy conservation are not eligible for grants. However, applications are evaluated partially on the adequacy of the conservation measures incorporated into the proposed activity.

THE SELECTION PROCESS

Grant and loan applications are submitted and evaluated separately. Applications for grant funding must be submitted by November 1 of each year; loan applications may be submitted every four months--by March 1, July 1, and November 1 of each year. DNRC staff reviews grant and loan applications for technical soundness, feasibility, and potential environmental impacts. The applications then are reviewed by the Renewable Energy Advisory Council, a citizens advisory group appointed by DNRC's director. Final decision for grant funding and loan authorization rests with the director, after hearing the recommendations of the staff and council.

Renewable energy loans are administered by private financial institutions in Montana. DNRC authorizes promising applicants to present their proposals to the financial institutions of their choice. The participating institution then treats the application as it would any request for a commercial loan. If the lending institution approves the loan, DNRC will provide up to 90 percent of the loan principal at the current Federal Reserve discount rate, within the confines of available funds. The financial institution provides the remaining principal at a rate not exceeding its customary interest rate, considering the size of the proposal and the risk associated with it.

After DNRC staff, the advisory council, and the director complete their review of loan applications, the agency simultaneously notifies all successful applicants that they are authorized to seek financing through a lending institution. That institution performs all necessary credit checks and other loan origination work, including the acquisition of all necessary security for its and DNRC's loan shares. The applicant is required to notify the department of the bank selected and of that bank's decision, terms, and conditions. Once these arrangements are complete and financing has been successfully arranged, DNRC funds successful loan applications on a first-come, first-serve basis, as long as money is available.

PROGRAM DEVELOPMENTS

FY 1982-83 BIENNIUM

During the FY 1982-83 biennium, the Department of Natural Resources and Conservation has effected several changes in the Renewable Energy Program, based on recommendations from the 1981 Legislature, the legislative auditor, and a DNRC review. Perhaps the most significant development is the loan program for commercializing renewable energy. This program directly stimulates Montana's renewable energy industry, involves the private financial community in proven renewable energy technologies, and allows public funds to be repaid when used in commercial settings.

In July 1981, DNRC temporarily suspended the grant cycle to allow for an in-house review of the program changes, including the new loan program. The review included a look at past grants, an assessment of the current renewable energy situation in Montana, and a determination of funding priorities for grants and loans. Several administrative changes resulted from the DNRC review. These included the following:

* Within DNRC's Energy Division, the Renewable Energy Bureau and Conservation Bureau were combined. This reduced duplication of efforts between complementary state and federal programs and allowed for better project coordination and sharing of staff resources.

* DNRC revamped the program's administrative rules to accommodate the new loan program and to further define eligible grant projects. Among the rule changes is a stricter definition of the types of demonstration projects that qualify for grant funding, with a greater emphasis on public and private nonprofit projects. Also, legislative changes made by the 1981 session restrict demonstration projects to locations where no similar projects have been built. Demonstration projects must incorporate a relatively well proven renewable energy technology with a strong likelihood for saving significant amounts of energy. Technologies in the research and development stage will not be funded as demonstration projects. A maximum funding level was established for any single grant or loan or for any single applicant or project: 10 percent of the total program appropriation ($180,000 in FY 1982).

* The grant contracting procedures were changed to give DNRC more control over project direction and progress. One significant change deals with the method of payment--grantees are now paid only as they reach negotiated milestones in completing their projects. These

procedures, coupled with closer monitoring of projects and stricter enforcement of grant provisions, should ensure timely completion of projects. Also, under these procedures DNRC retains ownership of all project materials and equipment until the terms of the contract are fulfilled. At that time, all equipment not essential to continued system operation is returned to the department.

* The department has developed stronger criteria for selection of grant projects. These criteria include increased emphasis on public benefits, grantee qualifications, and matching funds provided by the applicant.

* DNRC has improved coordination with related state agencies and councils, most notably the Environmental Quality Council, which oversees the program.

* More emphasis is placed on solicited projects. Although the unsolicited grant cycle is still a major part of the program, DNRC has taken a more active role in determining renewable energy needs across the state, and is no longer relying solely on unsolicited grants to meet these needs.

* DNRC has discontinued funding unsolicited projects outside the normal grant cycle.

* DNRC is conducting a sustainable energy assessment to develop the information required for the near-term implementation of cost-effective conservation and renewable energy measures. The project is three-fold: an end-use analysis will target the most promising opportunities for conservation and renewable energy application; a resource assessment will quantify the extent and availability of the renewable resources for energy production; and a technology profile will permit the most cost-effective and reliable match of commercially available systems with the available resource and with the energy service demanded. The results of this assessment will help DNRC to better direct and set priorities for the Renewable Energy Program.

* DNRC has increased its public information efforts for renewable energy. Program information is intended to increase awareness of what the projects have accomplished and to advertise the availability of grants and loans. This resulted in greater competition for grant funds in FY 1982 than in past years. The other goal of these efforts is to provide people with substantive information on what energy systems work and don't work in Montana. Information efforts include press releases, feature stories, radio and television public service announcements, films, workshops, fairs, speeches, and

demonstrations. Documents published through the program include:

- The Montana Renewable Energy Handbook -- an introduction to solar, wind, small-scale hydropower, geothermal and biomass energy alternatives;

- The Montana Sunpower series -- case studies of residential active and passive solar energy systems in Montana, including those funded through the program;

- Guidelines -- a guide to preparing application forms for renewable energy grants and loans;

- Montana Hydropower -- a guide to permitting requirements for small-scale hydropower projects; and

- Spotlights -- one-page descriptions of various renewable energy projects across Montana.

These publications are coordinated with several others published through DNRC's Energy Division.

Another ongoing information project under the Renewable Energy Program is the final report library. This collection of final reports from grant projects is available to the public. DNRC reviews each final report for clarity and accuracy. A paragraph describing the project and the technical level of the report is then added to the library inventory. DNRC is developing a brochure that describes the library and lists reports that Montanans can borrow. A report that is continually in high demand will be published for more general distribution.

GRANT AND LOAN PROJECTS

The administrative changes outlined above have had a significant impact on the Renewable Energy Program. In FY 1981, DNRC awarded 79 unsolicited grants totalling $2,298,989. The large number of projects funded was due, in part, to a surplus built up in the program's account brought about by increased coal production and a rise in coal prices. Revenue into the program's earmarked account through fiscal years 1980 and 1981 was $2.5 million greater than the amount appropriated. The 1981 Legislature appropriated the balance for grants in FY 1981. Most of these projects have been successfully completed, although several have been terminated by DNRC with little or no money spent. This action is a direct result of stricter enforcement of contract provisions.

As mentioned, for the FY 1982-83 biennium the department has implemented stronger project selection criteria and contract procedures to ensure a higher percentage of successful projects. Also, DNRC has developed the loan program and has increased its use of targeted, solicited projects. In FY 1982, the department chose to allocate $600,000 for unsolicited grants. Of the 126 grant applications received, 16 were selected to receive grants totalling $407,708. The remaining budget was used for loans, solicited projects, and administrative expenses. A $144,221 balance of uncommitted funds was returned to the earmarked account.

A complete list of renewable energy projects is available from DNRC. Among the projects awarded grants so far during this biennium were innovative solar heating systems for the Missoula Senior Citizens Center and the Park City School; a two-day workshop in Kalispell for farmers and ranchers interested in producing fuel-quality methane from cattle manure; construction and testing of a passive solar lumber kiln; and a handbook of renewable energy systems that can be incorporated into existing homes.

In FY 1982, DNRC received 18 loan applications. The department authorized nine applicants to pursue Renewable Energy Program loan financing through their private financial institutions. Seven applicants successfully arranged financing, for a total DNRC investment of $767,700 and a matching investment of $85,300 on the part of the financial institutions. Loan activities financed in FY 1982 include commercial development of a solar domestic water heating system, commercial hogfuel chip production from forest thinnings, and operating expenses for a commercial alcohol fuel plant.

Several solicited projects are being conducted through the program this biennium, all through a formal Request For Proposal (RFP) and competitive bid process. These projects include a

series of workshops on vertical-wall solar collector construction; marketing research to aid the department in effectively targeting its public information, education, and outreach activities for renewable energy; and several projects to measure renewable energy resources across Montana and to assess their development potential in light of current technologies. These latter projects, conducted as part of the Sustainable Energy Assessment, include preparation of a Montana wind energy atlas and a determination of stream flow characteristics on mountain streams with a potential for small hydropower development.

SUMMARY

The Renewable Energy Program has undergone numerous changes during the FY 1982-83 biennium. The administrative structure has been revamped to reduce duplication and more effectively utilize program staff. Grant selection criteria have been strengthened and contract procedures tightened. Performance monitoring of renewable energy systems has been substantially upgraded, along with dissemination of renewable energy information and information on the program. The grant program places increased emphasis on number of people served per project, overall public benefit and actual energy saved, while the loan program has been developed to stimulate commercial projects.

Program emphasis has shifted to reflect the changing nature of renewable energy in Montana. Originally charged with promoting small-scale, innovative projects, the program now encompasses relatively well proven technologies, sometimes on a municipal scale. Commercial projects, once banned by the authorizing legislation, are now encouraged through loans.

In the past, the Renewable Energy Program developed more or less ad hoc around the unsolicited grant proposals received and selected. Through the changes made this biennium -- the availability of commercial loans, greater control over project development and direction, increased use of targeted solicited projects, stronger administrative controls, increased monitoring and information dissemination -- DNRC is in a better position to direct the course of the program and, thus, to positively influence renewable energy development in Montana.

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